Space Weather Forecast

Issued on Friday 22 November 2024 at 13:20 Local

This forecast provides a four-day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

---

Space Weather Forecast Headline: Current S1 Minor Radiation Storm slowly easing.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Low during the past 24 hours, with only Common class flares observed.

There are currently ten sunspot regions on the disc. The main regions on the disc at present includes AR3901 in the southeast, which comprises several leading spots, with small trailing spots and pores. The newly numbered region, AR3903 in the southwest appears to have continued to develop. A newly numbered region AR3905 is also beginning to appear from around the southeastern limb, which given its location is currently difficult to analysis. The majority of the remaining groups are simple and small with little magnetic complexity.

Solar Wind / Geomagnetic Activity: Solar winds have seen fairly steady slow to slightly elevated regime, with solar wind speeds 370-410km/s. The Interplanetary Magnetic Field (IMF), Bt, was weak to moderate. The north-south component generally weak but variable. Quiet to Unsettled geomagnetic activity.

Energetic Particles / Solar Radiation: Solar radiation rose quickly from 21/1820 UTC following a large far-sided CME. Briefly reaching S2 Moderate Radiation Storm levels before slowly declining, but remains above the S1 Minor Radiation Storm threshold.

Four-Day Space Weather Forecast Summary

Solar Activity: Low to Moderate activity is expected, with a chance of isolated Moderate flares.

Solar Wind / Geomagnetic Activity: No Earth-directed CMEs currently feature in the forecast.

Geomagnetic activity is expected to be dominated by potential solar wind enhancement, with the potential for increases in the solar wind to slightly-enhanced or enhanced levels, 450-500km/s, at times during the period.

Generally Quiet to Unsettled (Kp1-3) conditions expected, with a chance of Active (Kp4) intervals at times and a slight chance of G1/Minor Storm intervals.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 370 900 0100 Email: enquiries@metoffice.gov.uk

© Crown Copyright 2024. All Rights Reserved.

Met Office

Space Weather Forecast

Energetic Particles / Solar Radiation: The ongoing S1/Minor Solar Radiation storm is expected to continue through Day 1 (22 Nov) and likely into Day 2 (23 Nov) following recent enhancement. Solar radiation levels are likely to take a few days to recover back to background from this event.

Geomagnetic Storms

Geomagnetic Storm	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Minor or Moderate	G1 to G2	No	10	10	10	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X-Ray Flares

X-Ray Flares	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability			(%)	(%)	(%)	(%)
Active	R1-R2 (M Class)	No	40	40	40	40
Very Active	R3-R5 (X Class)	No	1	1	1	1

Solar Radiation Storms (High Energy Protons)

Radiation Storms	Level ($cm^{-2}sr^{-1}s^{-1}$)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Active	≥ S1	Yes	100	70	40	10
Very Active	≥ S3 *	No	10	5	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and/or 50 MeV ≥ 10pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)						

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 370 900 0100 Email: enquiries@metoffice.gov.uk

© Crown Copyright 2024. All Rights Reserved.